

REMARKS

This paper is submitted in reply to the Office Action dated March 22, 2007, within the three-month period for response. Reconsideration and allowance of all pending claims are respectfully requested.

In the subject Office Action, claims 29 and 30 were rejected under 35 U.S.C. § 101. Additionally, claims 1-3, 6-9, 14-16, 19-22 and 27-30 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,713,018 to Chan. Furthermore, claims 4-5, 10-13, 17-18 and 23-26 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Chan.

Applicants respectfully traverse the Examiner's rejections to the extent that they are maintained. Applicants have canceled claims 12, 25 and 30, and amended claims 1, 3, 13, 16, 26 and 29. Applicants respectfully submit that no new matter is being added by the above amendments, as the amendments are fully supported in the specification, drawings and claims as originally filed. Applicants also note that the amendments made herein are being made only for facilitating expeditious prosecution of the aforementioned claimed subject matter. Applicants are not conceding in this application that the originally-claimed subject matter is not patentable over the art cited by the Examiner, and Applicants respectfully reserve the right to pursue this and other subject matter in one or more continuation and/or divisional patent applications.

Now turning to the subject Office Action, and specifically with regard to the §101 rejections, the Examiner will note that Applicants have amended claim 29 to recite that the program code is configured to perform the recited steps "upon execution," and that the computer readable signal bearing medium is "recordable." Claim 30 has also been canceled without prejudice. As discussed at page 9, lines 16-20 of the specification, a "recordable medium" is distinguished from a "transmission medium," and thus specifically excludes signals. Applicants respectfully submit that the amendments place claim 29 in a form that is considered statutory by the Office's current guidelines. Withdrawal of the §101 rejections is therefore respectfully requested.

Now turning to the art-based rejections, and specifically to the rejection of independent claim 1, this claim generally recites a method of executing a query in a database management system. The method comprises receiving an SQL statement from an

application program coupled to the database management system; executing the SQL statement; encrypting the SQL statement to generate an encrypted representation of the SQL statement; and logging execution of the SQL statement in a database monitor by storing the encrypted representation of the SQL statement in an execution log managed by the database monitor. The claim has also been amended to additionally recite the step of:

displaying the execution log, including retrieving the encrypted representation of the SQL statement from the execution log, decrypting the encrypted representation of the SQL statement to generate an unencrypted representation of the SQL statement, and displaying the unencrypted representation of the SQL statement.

Support for this amendment may be found, for example, at page 12, lines 3-17 of the Application as originally filed.

In rejecting claim 1, the Examiner relies solely on Chan, and in particular, col. 1, lines 65-67, col. 2, lines 48-67, col. 3, lines 11-60 and col. 4 lines 35-60. Chan, however, does not disclose any database monitor or execution log, much less a database monitor or execution log that encrypts any information stored therein.

A database monitor is a well known program used in a database management system to log the execution details of the system in an execution log, and is often used to optimize the system and/or the queries processed by the system. As discussed, for example, at page 3 of the Application, it has been found that in some instances, some of the execution details logged in an execution log by a database monitor may contain confidential information that a party may not wish to have accessible by others. For example, some execution details such as the values passed to parameter markers or host variables during execution of a query may include confidential information such as employee social security numbers, salary information, etc. In addition, query statements such as SQL statements may be confidential to an application developer, and a developer may prefer to keep those statements from being viewed by customers or competitors. Conventional database monitors, however, typically log all execution details for an executed query execution in an execution log, without regard to the type of execution detail. Consequently, if database monitoring is enabled, the potential exists that

confidential information could be logged in a database monitor execution log and accessed by unauthorized parties.

The invention recited in claim 1, addresses this problem in part by encrypting a SQL statement that is being processed by a database management system such that an encrypted representation of that SQL statement is logged in the database monitor.

Subsequently, whenever the database monitor is accessed to display all or a portion of the execution log, the SQL statement must be decrypted prior to being displayed. As a result, only parties authorized to decrypt the SQL statement will be able to view an unencrypted representation of the SQL statement when the execution log is displayed. Unauthorized parties, e.g., parties not having the appropriate decryption key, will not be able to view the unencrypted representation of the SQL statement.

Chan lacks any disclosure of encrypting an SQL statement and storing the encrypted SQL statement in an execution log of a database monitor. In fact, neither the term “log” nor the term “monitor” is even found in the reference. The passages cited by the Examiner merely disclose encrypting SQL statements passed by clients to a database management system as a mechanism for allowing only trusted clients to access certain types of SQL statements (e.g., untrusted clients may only be able to issue read-type SQL statements, but trusted clients may be permitted to issue write-type SQL statements to enable only trusted clients to modify the contents of the database, *see col. 1, lines 14-24*).

In fact, Chan does not even disclose any encryption mechanism in a database server. Rather, clients are required to encrypt SQL statements, while a decryption engine in the server is used to decrypt those statements. Even if a conventional monitor is used in the Chan system (though no monitor is actually disclosed), there is no disclosure of any encryption engine within the Chan server that could encrypt SQL statements before they were stored in an encryption log. Of note, the cited passages at col. 3, lines 35-60 and col. 4, lines 50-60 refer to encryption operations performed in clients rather than any server in which a database monitor could be implemented.

As noted above, claim 1 also now recites the display of the execution log, along with the retrieval, decryption and display of an unencrypted representation of an SQL statement that has been encrypted and stored in the execution log. Chan has no disclosure whatsoever relevant to this concept. In fact, the Examiner is required to rely on official

notice in rejecting claims 12 and 25 (which recite decryption in connection with displaying an execution log), stating:

displaying computer data was well known to those of ordinary skill in the art at the time of the invention. For example, such logs are often generated as reports to serve administrators who seek to maintain the system. (Office Action, page 11).

The Examiner's reliance on official notice in this instance, however, is insufficient to establish anticipation of claim 1. While the display of an execution log from a database monitor may be well known, there is no evidence on the record that establishes the conventionality of either storing execution details such as SQL statements in an execution log in an encrypted format, or decrypting execution details such as SQL statements in connection with displaying those execution details along with an execution log.

Applicants respectfully submit Chan does not disclose either the encryption of SQL statements that are stored in an execution log of a database monitor, or the decryption of such statements in association with displaying an execution log. As such, claim 1 is novel over Chan, and the rejection should be withdrawn. In addition, there is no suggestion in the art to modify Chan to incorporate any such functionality. Given the unique and unexpected advantage of protecting potentially confidential execution details from being accessed via a database monitor, Applicants submit that claim 1 is also non-obvious over Chan. Reconsideration and allowance of independent claim 1, and of claim 2 which depends therefrom, are therefore respectfully requested.

Next with regard to the rejection of independent claim 3, this claim generally recites a method of logging query execution in a database management system. The claim has been amended to incorporate the subject matter of claim 12, and now recites generating an encrypted representation of an execution detail for a query executed by the database management system, logging the execution detail for the query in an execution log for the database management system by storing the encrypted representation thereof in the execution log, and decrypting the execution detail in association with displaying the execution log. Claim 12 has been canceled, and claim 13 has been amended, in connection with the amendment to claim 3.

Claim 12 is rejected as being obvious over Chan. As discussed above in connection with claim 1, however, Chan does not disclose or suggest the encryption of SQL statements or other execution details and the storage of same in an encrypted representation in an execution log. Chan also does not disclose or suggest decrypting an execution detail in association with displaying an execution log.

The Examiner cites col. 3, lines 10-60 and col. 4, lines 50-60, in rejecting claim 3. As noted above in connection with claim 1, however, these passages merely disclose functionality disposed in a client that encrypts a SQL statement prior to transmitting that statement to a database management system. Neither passage discloses or suggests encrypting an execution detail and storing that execution detail in an execution log in an encrypted representation.

In addition, in rejecting claim 12, the Examiner cites col. 4, lines 15-25 for allegedly disclosing decrypting an execution detail in association with displaying an execution log. However, the cited passage only refers to the decryption of an SQL statement by a database management system in connection with executing the statement. Again, no discussion is provided of a database monitor or execution log, and certainly no suggestion is provided for decrypting an SQL statement in connection with displaying any execution log. Furthermore, as discussed above in connection with claim 1, the Examiner's reliance on official notice addresses only the concept of displaying an execution log from a database monitor. The fact that the display of an execution log may be known falls far short of disclosing or suggesting to one of ordinary skill in the art the concept of decrypting an execution detail in association with displaying an execution log.

Applicants therefore respectfully submit that the Examiner has failed to establish a *prima facie* case of obviousness as to claim 3. Reconsideration and allowance of claim 3, and of claims 4-11 and 13-15 which depend therefrom, are therefore respectfully requested.

Next, with respect to independent claims 16 and 29, each of these claims has been amended to incorporate the subject matter of claim 25, and claim 25 has been canceled, and claim 26 amended, for consistency with these amendments. Claims 16 and 29 recite, similar to amended claim 3, generating an encrypted representation of an execution detail for a query executed by the database management system, logging the execution detail for the query in the execution log by storing the encrypted representation thereof in the

execution log, and decrypting the execution detail in association with displaying the execution log. As discussed above in connection with claim 3, this combination of features is not disclosed or suggested by Chan. Accordingly, claims 16 and 29 are non-obvious over Chan, and the rejection should be withdrawn. Reconsideration and allowance of independent claims 16 and 29, and of claims 17-24 and 26-28 which depend therefrom, are therefore respectfully requested.

As a final matter, Applicants traverse the Examiner's rejections of the dependent claims based upon their dependency on the aforementioned independent claims. Nonetheless, Applicants do note that a number of these claims recite additional features that further distinguish these claims from the references cited by the Examiner. However, in the interest of prosecutorial economy, these claims will not be addressed separately herein.

In summary, Applicants respectfully submit that all pending claims are novel and non-obvious over the prior art of record. Reconsideration and allowance of all pending claims are therefore respectfully requested. If the Examiner has any questions regarding the foregoing, or which might otherwise further this case onto allowance, the Examiner may contact the undersigned at (513) 241-2324. Moreover, if any other charges or credits are necessary to complete this communication, please apply them to Deposit Account 23 3000.

Respectfully submitted,

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